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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,221	09/21/2001	Barend Johannes De Klerk	U 013650-0	5855

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EXAMINER

KERNS, KEVIN P

ART UNIT PAPER NUMBER

1725

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,221

Applicant(s)

DE KLERK, BAREND JOHANNES

Examiner

Kevin P. Kerns

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-33 is/are pending in the application.
- 4a) Of the above claim(s) 6-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-32 is/are rejected.
- 7) ☒ Claim(s) 29,32 and 33 is/are objected to.
- 8) ☒ Claim(s) 6-33 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2001 and 08 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Objections

1. Claims 29 and 32 are objected to because of the following informalities: in claim 29, 2nd line, it is suggested to replace "round and round" with "around" (or an equivalent) for further clarity. In claim 32, 3rd line, it is suggested to delete ", as the case may be" for further clarity, as the term "or" already sets forth both limitation options. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagamura et al. (US 3,645,700).

Nagamura et al. disclose an apparatus for fluidized-bed reactions, in which the apparatus includes metal or nonmetal circumferentially spaced projections of various shapes at calculated intervals (including equidistantly spaced) in the horizontal plane of the internal annular sidewall of the cylindrical process vessel, resulting in a process that includes substantially reduced wear from erosion due to impinged solid particles that strike the sidewall and/or projections at various angles while being entrained in a

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generally vertically flowing fluid, with the projections defining bays/pockets between adjacent projections and between each projection and the internal sidewall, in order to trap/suspend solid particles and hence reduce erosion of the sidewall of the vessel (abstract; column 1, lines 5-12; column 2, lines 18-45 and 64-75; column 3, line 1 through column 9, line 26; and Figures 1 and 2). Although not specifically disclosed in the reference, one of ordinary skill in the art would have recognized that the structural features established in the reference would readily be used in a process of reducing erosion in fixed bed reactors (in addition to fluidized bed reactors), and the impinged solid particles within the reactor (while having a generally vertically flowing component) would also have angular (whirling) components due to deflection by the projections of a portion of the solid particles (being present in both types of reactors), with the disclosed structural elements resulting in the advantageous feature of reducing sidewall erosion.

4. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonn et al. (US 4,407,355).

Bonn et al. disclose a method and apparatus for decreasing the heat and material exchange in the vicinity of walls of fluidized bed reactors, in which the method includes providing a cylindrical vessel with an internal annular sidewall having a plurality of components (projections) attached at their respective bases in an equidistant manner in a horizontal plane around the circumference of the vessel, such that a portion of the components are arranged at angles with respect to the generally vertically flowing fluid, while trapping/suspending the intensively agitated (whirling) granulated solid entrained

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in the fluid within bays/pockets between adjacent components and between each component and the internal sidewall, resulting in reduced impingement velocity of the intensively agitated solid particles to reduce sidewall erosion (abstract; column 1, lines 8-18; column 2, lines 9-68; column 3, lines 1-68; column 4, lines 1-64; and Figure).

Although not specifically disclosed in the reference, one of ordinary skill in the art would have recognized that the structural features established in the reference would readily be used in a process of reducing erosion in fixed bed reactors (in addition to fluidized bed reactors), and the impinged solid particles within the reactor (while having a generally vertically flowing component) would also have angular (whirling) components due to deflection by the projections of a portion of the solid particles (being present in both types of reactors), with the disclosed structural elements resulting in the advantageous feature of reducing sidewall erosion.

Allowable Subject Matter

5. Claim 33 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest a method of inhibiting erosion of an interior surface of a fixed bed process vessel that includes retaining means, in which the retaining means is a generally horizontally extending tile or brick layer, with each

trapping formation defined by a tile or brick of increased depth or thickness compared to other tiles or bricks in the layer of tiles or bricks and projecting above the upper surface of the tile or brick layer (dependent claim 33).

Response to Arguments

7. The examiner acknowledges the applicant's amendment, replacement drawing sheet, and foreign priority document, all of which were received by the USPTO on November 8, 2004. The amendment overcomes prior objections to the specification, and the replacement drawing sheet (Figure 2) is approved. The applicant has cancelled claims 1-5, while adding new claims 29-33. Claims 6-28 remain withdrawn from consideration as being drawn to non-elected inventions. Claims 29-33 are currently under consideration in the application.

8. Applicant's arguments with respect to claims 29-32 have been considered but are moot in view of the new ground(s) of rejection.

Regarding the applicant's arguments on pages 17-20 of the amendment, the applicant is referred to the newly underlined portions of paragraphs 3 and 4 above.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571)

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272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kerin Kerns 1/11/05*
Examiner
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KPK
kpk
January 11, 2005